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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,306	09/10/2003	HeBen Liu		5377
25859	7590	01/18/2006		
WEI TE CHUNG FOXCONN INTERNATIONAL, INC. 1650 MEMOREX DRIVE SANTA CLARA, CA 95050			EXAMINER AGRAWAL, CHRISTOPHER K	
			ART UNIT 3726	PAPER NUMBER

DATE MAILED: 01/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/660,306	Applicant(s) LIU, HEBEN	
	Examiner Christopher K. Agrawal	Art Unit 3726	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
 4a) Of the above claim(s) 16-18 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-15 is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☒ Claim(s) 6-9 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/10/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: In line 6 of claim 1, "he" should be replaced with --the--.
2. Claim 11 is objected to because of the following informalities: In line 2 of claim 11, it is not clear what "the other unsealed end" refers to. Examiner interprets that just before step (k), there is only one unsealed end since one end is sealed in step (j). Applicant may clarify by removing "other" from the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Ootori et. al. (U.S. Patent No. 6,516,867).**
5. Claim 1: Ootori teaches an apparatus 1 for making a cooling device, the cooling device comprising a heat sink and a heat pipe integrally formed with the heat sink (**Col.**

3 lines 12-14), the heat sink comprising a base and a plurality of fins (**Col. 1 lines 22-23**), the apparatus comprising: a mold, comprising a base part and a pair of symmetrical forming parts slidably engaged on the base part (**Col. 2 lines 60-63**), each of the forming parts defining a plurality of slots corresponding to the fins of the heat sink (**Col. 5 lines 1-3**), a cavity at endmost portions of the slots corresponding to the base of the heat sink (**Col. 5 lines 1-3**), and a recess in communication with the cavity corresponding to the heat pipe wherein one portion of the recess extends transversely the slots (**Col. 6 lines 7-11**); and a core accommodated in the recess of the forming parts.

6. Examiner notes that use of a core in formation of a heat pipe is inherent in the reference. In order to form a pipe, which is hollow, a core must be used.

7. Claim 2: Ootori also teaches the apparatus of claim 1 wherein each of the forming parts further defines a chamber adjacent the slots, and the chamber is in communication with the ends of the recess.

8. Examiner notes that incorporation of a chamber adjacent the slots in communication with the ends of the recess is inherent in the reference. The reference teaches the method wherein a path, opening or chamber must be provided in communication with the ends of the recess.

9. Claim 3: Ootori also teaches the apparatus of claim 2 wherein each of the forming parts further defines a sprue and a conduit connecting between the sprue and the cavity, the sprue being for feeding molten material into the mold, the conduit being for conveying molten material from the sprue to the cavity (**Col. 6 lines 12-15**).

10. **Claim 4:** Ootori also teaches the apparatus of claim 3 wherein each of the forming parts further defines a well above and in communication with the slots for air venting when the mold is filled with molten material and for providing surplus molten material needed when molten material in the slots solidifies and shrinks during a molding process (**Col. 6 lines 12-15**).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Ootori et. al. (U.S. Patent No. 6,516,867).

13. Ootori teaches the apparatus of claim 1 but does not specifically teach the apparatus wherein the base part defines a pair of grooves in a top face thereof, and each of the forming parts comprises a pair of slide blocks slidably engaged in the grooves.

14. Examiner takes official notice that conventional mechanisms for imparting linear translation of dies or forming parts are well known in the art. Specifically, tongue-and-groove or slide blocks with grooves are common and obvious incorporations in view of their widespread use in applications involving linear translation of objects relative to a

base or track. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used slide blocks in order to provide linear translation.

Allowable Subject Matter

15. Claims 6-9 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

16. The following is an examiner's statement of reasons for allowance:

17. The prior art does not teach an apparatus for making a heat sink having a heat pipe formed integrally with the heat sink by use of a core wherein the core comprises a U-shaped main body and a peripheral portion integrally adjoining ends of the main body.

18. Claims 10-15 are allowed.

19. With respect to claims 10-15, the following is an examiner's statement of reasons for allowance:

20. The prior art does not teach a method for making a heat sink having a heat pipe formed integrally with the heat sink by use of a core wherein the core comprises a main body and a peripheral portion adjoining ends of the main body and wherein the core is attached to a forming part of a mold used in forming the heat sink, in combination with all of the other claim limitations.

21. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

23. U.S. Patent No. 6,253,829 teaches a heat sink and process and apparatus for manufacturing the same.

24. U.S. Patent No. 6,571,859 teaches a heat sink and process and molding tool for production of the same.

25. U.S. Patent No. 5,562,146 teaches a method of and apparatus for forming a unitary heat sink body.

26. U.S. Patent No. 6,817,096 teaches a method of manufacturing a heat pipe construction.

27. U.S. Patent No. 6,397,941 teaches a net-shaped molded heat exchanger.

28. U.S. Patent No. 6,321,452 teaches a method for manufacturing the heat pipe integrated into the heat sink.


29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher K. Agrawal whose telephone number is (571) 272-3578. The examiner can normally be reached on Mon-Fri 8AM-4:30PM.

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30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Jimenez can be reached on (571)272-4530. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

31. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CKA


MARC JIMENEZ
PRIMARY EXAMINER

1-12-00